Reduce your energy bills and take control of your sustainability targets

Commercial & Industrial Rooftop Solar in Mainland China White Paper

SWEDCHAM.CHINA
中国瑞典商会

Greenfield

Manufacturing facility with rooftop solar installation

Executive Summary

Thanks to a range of innovative technical developments, transitioning to solar energy has never been more affordable for businesses. Over the last decade, the costs for solar systems have decreased dramatically in favor of the buyer. As a result, a solar energy system purchase not only pays for itself, but it gives businesses the option to lower costs and lock-in decades of predictable energy expenses, replacing fossil fuel based electricity with clean and green energy.

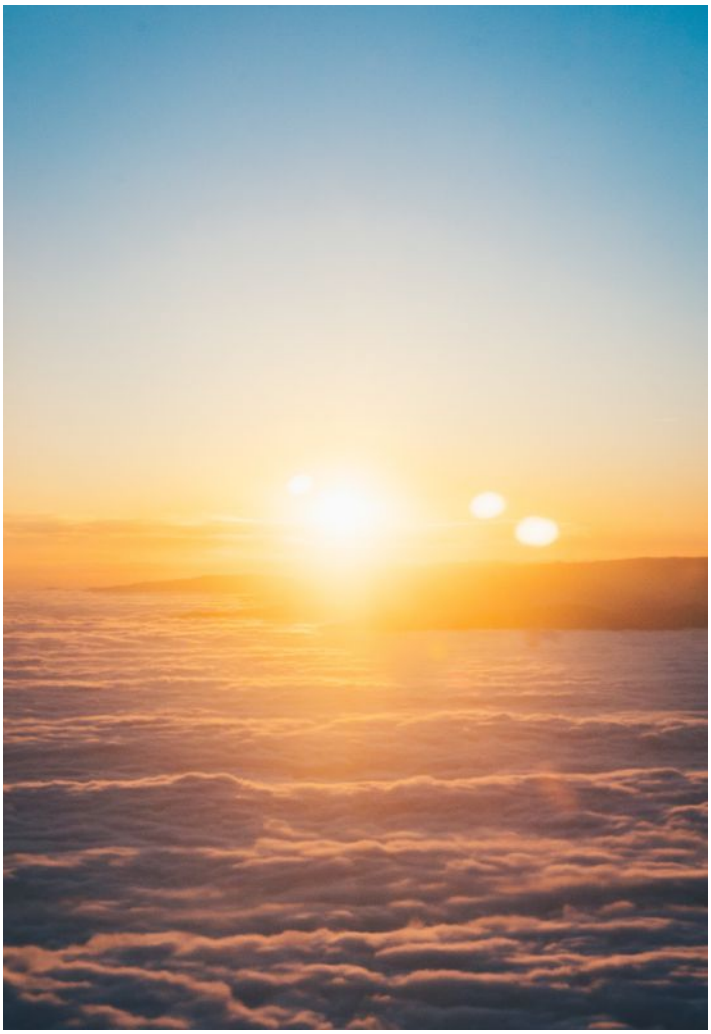
This white paper covers the basic of commercial and industrial solar energy in Mainland China, explaining the options available, their respective benefits and what you should consider before moving forward with a solar project.

While starting a solar project may seem daunting, Greenfield is here to help. With over 108 years of cumulative team experience in the renewable energy field, Greenfield knows how to successfully deploy solar installations, providing superior technology, solar policy analysis, project financing, site analysis, educational tools, and a host of other tools, support and consulting.

From site assessment to installation to operation and maintenance (O&M), Greenfield can help ensure your solar project proceeds as smoothly as possible and produces reliably for the long-term.

Benefits of commercial and industrial solar

Rising energy costs are a reality for every organization. But what if you could take control of your energy costs—now and into the future? Leading organizations in China and around the world have discovered that an energy strategy which includes solar and energy information systems is a powerful way to reduce - operational costs and drive sustainability. With Greenfield as your energy ally, you can reduce your energy costs and advance your business into a cleaner, brighter future.



Reduce your energy bills

Electricity makes up a large portion of monthly business expenses. With a solar system, you will generate free and clean power for your systems entire 25+ year lifespan. Even if you consume more energy than the system produces, solar still reduces your electricity bills, having a substantial impact on reducing overall operational costs.

Take control over your electricity supply

Commercial and industrial rooftop solar can offer freedom from the electricity supply market with predictable electric bills. This helps you avoid changes in the electricity rates and assurance of a reliable electric supply regardless of what happens to the energy market. Industrial electricity costs across China have risen by 20% over the past ten years and this is a trend that's likely to continue.

Reach your sustainability goals faster

On site solar electricity is the most efficient way to reduce your Scope 1 and Scope 2 emissions. By implementing a commercial and industrial rooftop solar system, you can harness the benefits of reduced electricity costs with direct carbon emission reductions and reach your sustainability goals faster.

Increase your business value

Commercial solar is an excellent way to boost your bottom line, rally employees and improve overall brand recognition. Incorporating rooftop solar to your commercial and industrial building may also significantly increase the value of the property

Help the environment

Commercial and industrial rooftop solar is a clean, emissions-free, and renewable energy source. Unlike fossil fuels such as coal and natural gas, solar energy doesn't release harmful pollutants or greenhouse gas emissions—like carbon dioxide—into the air and water supply.

Getting started with solar

Determining Electrical Needs and Sustainability Goals

Twelve months of energy bills are needed for developing an accurate evaluation of your organization's electrical needs. Along with that, you need to know the utility rates and the rate schedule. Greenfield can help you to factor in rate escalation because utility rates have a long history of increases.

Technical Factors

A) Weather and Climate

If you are interested in a rooftop solution, climate factors, such as solar irradiation, shading and wind speed are key considerations and influence the type of solution selected. Similarly, an area with no flooding issues should be selected for ground sites.

B) Space Availability

Determining how much space you have available for solar system is another important factor. This influences how large of a system that can be built, which impacts the energy production generated. Rooftop, open ground spaces and parking lots are several potential locations for a solar installation.

C) Roof Structure & Interconnection

For rooftop installations, the integrity of the roof needs to be evaluated to ensure it can accommodate the addition weight of solar panels. In order to ensure that your system is online as soon as possible, it is also important that the installation be located near your meter.

Assessing Investment Options

Solar power is within financial reach for organizations everywhere because of the many innovative investment tools that are now available. If a cash-investment isn't possible, an energy management contract (EMC) allows your organization to lock in a long-term electrical rate with no upfront costs.

Investing in Long-Term Energy Stability

By initiating a solar project, you can help your organization to enjoy significant savings on electricity bills. Furthermore, insulation from volatile utility rates offers increased stability and predictability for your company's budget. Going solar is a great long-term investment, and with Greenfield by your side, you can soon turn sunlight into one of your organization's biggest assets.

Rooftop solar investment options

Thanks to a range of innovative technical and financial options, transitioning to solar energy has never been more affordable for businesses. By choosing one of the investment options discussed in this white paper, you can begin generating clean energy from the sun and start reducing your energy costs immediately.

1. Energy Management Contract

An Energy Management Contract (EMC) is an arrangement that allows your business to purchase solar electricity with no upfront investment cost. To achieve this, your organization provides unused rooftop, land, or parking lot space as a location for a solar installation. Greenfield pays for the full cost of the solar installation and assumes all responsibility for ownership, operation, and maintenance once the solar project is complete. As the host organization, you enter into an agreement to purchase the electricity produced by the system owned by Greenfield at a predetermined and discounted rate per kilowatt-hour, the same unit of measurement on your standard utility bill.

This model allows you to reduce electricity costs immediately and realize increased savings over time as grid electricity prices rise. Once the EMC contract period expires (typically 25 years), you can purchase the system at a reduced price, sign another EMC or have the solar installation removed.

Benefits of EMC

- Zero investment, you only pay for the solar electricity that is produced
- Lowered electricity costs from day one
- No responsibility for system operation or maintenance
- Reduced carbon emissions

Key EMC Considerations

EMCs provide access to solar electricity without the burden of owning or operating solar equipment by transferring the investment cost to Greenfield. Entering into a EMC requires a detailed contract and thorough credit review of your company. As a result, choosing a EMC will typically extend a project's timeline relative to a direct cash investment.

2. Cash Investment

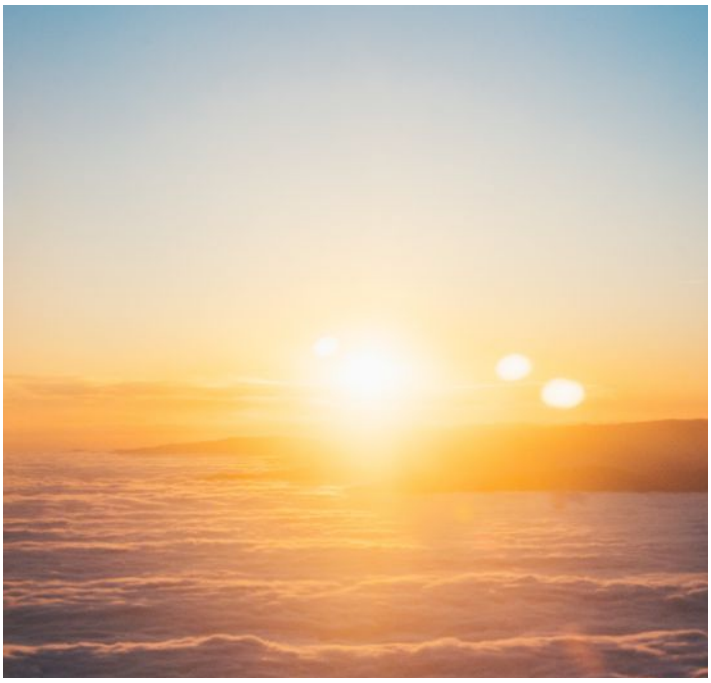
The simplest path to financing a solar project is to purchase the system directly. You buy and own the solar installation which allows you to directly benefit from lowered electricity costs. If you have available capital you may find cash purchases to be the best option.

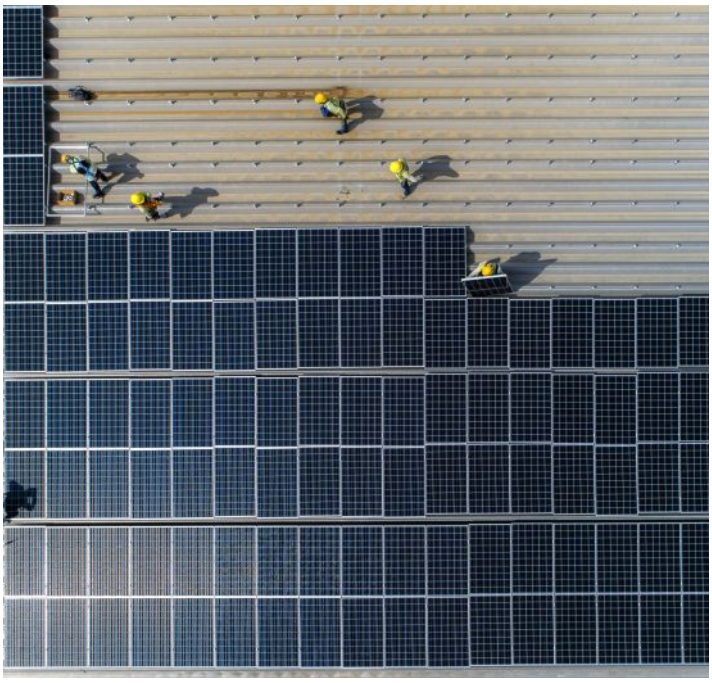
Benefits Of Cash Investment

- Faster and more streamlined processing reduces the total time required for a solar installation, allowing you to begin benefiting from clean, solar electricity as quickly as possible
- Greater potential savings since you avoid third party expenses
- Attractive return on investment
- Reduced carbon emissions

Key Cash Investment Considerations

Although cash investments transfer the entire solar installation and all associated benefits directly to you, they also transfer the added responsibility of system operation and maintenance. If total savings are your main concern, it is worth exploring cash investment as a financing option. However, if you prefer not to devote capital to installing, operating, and maintaining a solar project, consider an Energy Management Contract (EMC) instead.





How does the solar system work?

A solar system is made up of three basic parts: solar panels, inverters and a meter. Solar panels capture the sunlight hitting your roof and convert it into electricity. A solar inverter connected to your solar panels converts this electricity into the clean energy that can power the lights and appliances in your facility. The solar energy powering your facility decreases the amount of energy you need to draw from the grid, lowering your electricity bill. Your meter captures your system's information and allows you to monitor your energy production through the system.

How does my facility get power at night?

We connect your solar system to your facility's transformer. At night, the solar system will turn off and your facility will be powered by the electric grid. During this time, your electric utility's meter will record how much energy your facility is using, as it does today.

Where does the solar power go if I don't use it all?

When the sun is shining, the power that is generated by the solar system on your roof will flow into your facility. As your system generates more power than your facility can immediately consume, your electric meter will reflect as such. Your electric bill will show zero usage during that time. During a sunny summer day, your solar panels may produce more power than your facility needs. At that time, your solar system will be fully powering your facility and all the excess power will flow backward through your electric meter, where it will be consumed by other businesses connected to the grid.

Greenfield's solar capabilities

By partnering with Greenfield, you are choosing the number one international developer of commercial solar projects in China. With extensive investment, design, installation and maintenance experience, Greenfield offers unrivaled forecasting and consultation expertise. We will arm you with every tool you need to successfully lead your organization towards a solar future, including financial analysis, site evaluations, financing options, and a host of other resources to help you implement your solar project.

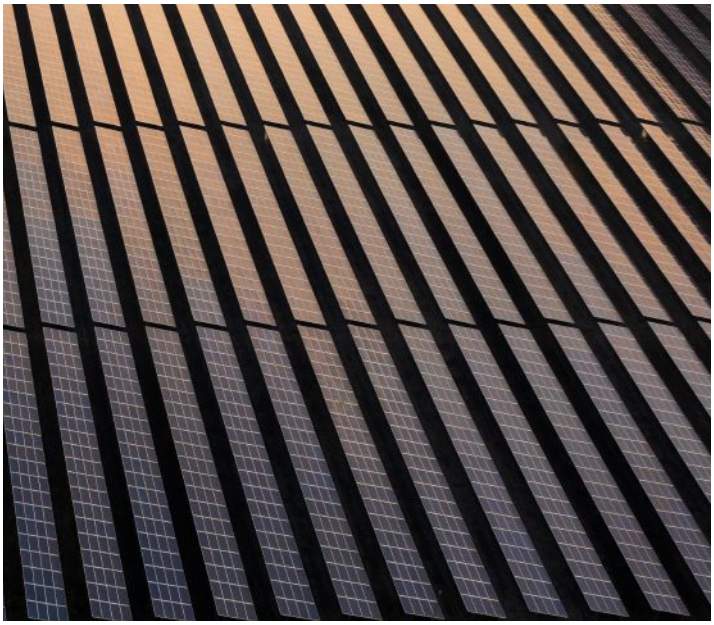
Turnkey Solutions

Our in-house engineering and construction team deliver turnkey EPC solutions covering the full scope from start to finish, including initial project screening, project design and installation. We rely on a comprehensive safety framework to make judgement on the reliability of projects based on real generation data, on-site inspection procedures and in-depth understanding of market price and contract details. We work closely with commercial insurers to ensure that our projects are delivered with safety and back to back warranties covering the expected operational lifetime of the projects. We are able to support your organisation with either EMC contract models as well as direct cash investments.

Unrivaled Project Experience

Greenfield's solar development track records are on the forefront within the solar industry in China. Below are just a few highlights from our teams experience helping corporate and public clients develop, install, and finance solar installations:

- More than 2.9 Billion RMB in project construction value delivered over the past 10 years
- More than 70 projects executed with a total installation capacity exceeding 400 MW
- Industry-leading relationships with multiple top-tier financiers and equipment partners
- Greenfield clients include Toyota, Samsung, Bridgestone and Shanghai City Municipality



Interested in solar energy for your organisation? Contact Greenfield

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About Swedcham

The Swedish Chamber of Commerce in China (SwedCham China) is a non-profit, non-governmental organization with 240 Swedish and Sweden-related member companies, officially recognized as foreign chamber by the PRC. Our mission is to advance our members' business interests through in the role as Facilitator for Networking and Information flow.

We strive to always be relevant to our member companies. If you want to collaborate with us in any way or have any questions, we welcome you to contact us for further discussions!

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